Musculoskeletal Injury in AMEDD Soldiers

LTC E. WAYNE COMBS, PhD, AN

COL LAURA R. BROSCH, PhD, AN

OVERVIEW

1 year descriptive study funded by TSNRP

Background: Good info on homogenous groups. No data on more heterogenous populations

Purpose: To describe the magnitude and nature, and examine selected physiologic, psychosocial, and lifestyle risk factors of musculoskeletal injury in a large fixed Army MTF

SPECIFIC AIMS

- Describe magnitude of MS injuries, ID most frequent types
- Describe selected demographic, physiologic, psychosocial, and lifestyle factors
- Examine relationships between MS injuries and physiologic factors (BMI, run times)
- Examine relationships between MS injuries and psychosocial factors (life events, WAYS)

SPECIFIC AIMS

- Examine relationships between MS injury and lifestyle factors (Work schedule, PA, tobacco use, and alcohol use)
- Examine relationship between the date of APFT and the occurrence of MS injuries

RESEARCH PLAN

- Guided by expanded version of Andersen and Williams model of stress and athletic injury
- Individuals with a history of many stressors, personality characteristics that tend to exacerbate the stress response, and few coping resources or skills will exhibit greater physiologic activation and attentional disruptions and will be at an increased risk for injury

RESEARCH PLAN

Variables examined

Independent

BMI	Gender
Run times	Age
Ways of Coping	Life events
Tobacco use	Alcohol use
Physical activity	Work hours

Dependent

MS Injury

SAMPLE / METHODOLOGY

- Target population -1868 AMEDD soldiers at fixed MTF
- Male/female, all ages, all ranks, all MOS
- Study packets were placed in ward/workplace mailboxes
- 2nd distribution in approximately 3 weeks
- 635 surveys returned (34%)

INSTRUMENTS

Demographic sheet

Questionnaire

- Work history
- Tobacco/alcohol use
- Physical activity

Life Experiences Survey

Ways of Coping (WAYS)

DATA ANALYSIS

Descriptive statistics

Chi square

Logistic regression

Results

Sample

Age	34.9	Run Time	16:00
Ht	68.05	Injury Rate	52.9
Wt	168.9	Lost duty	29.84
BMI	25.4	Total	11, 600

Results

Men

Age	35.7	Run Time	15:02
Ht	70.02	Injury rate	52.3
Wt	183.2	Lost duty	30.89
BMI	26.08		

Results

Women

Age	33.5	Run Time	18.33
Ht	64.4	Injury rate	54.4
Wt	143.5	Lost duty	27.9
BMI	24.2		

Results

Types of Injuries

Stress fracture	33 (7%)
Trauma fracture	17 (3%)
Overuse	210 (43%)
Sprain	132 (27%)
Other	96 (20%)

Results

Injury activity

Individual sport	63
Team sport	35
Exercise	220
At home (Routine activity)	45
Other	34

Results

Weekly alcohol intake

>5 drinks	5%
5 drinks or less	37%
None	48%

Results

Tobacco products

- Cigarettes
  - None 91%
  - 20/day 1%
- Cigars
  - None 99%
- Smokeless
  - None 99%

Results

- Exercise
  - Aerobic
    - 5 times per week 13%
    - None 10.6%
  - Strengthening
    - 5 times per week 13%
    - None 15%

Results

Logistic Regression Analyses

	OR	p
Negative LES score	.972	.0043
Confrontive coping	1.07	.0066
Self-controlling	1.05	.0053
Accepting responsibility	1.09	.0041
Escape avoidance	1.06	.0023
Smoking	3.11	.015

Results

Timing of injury related to APFT

More than 1 month before	71%
Less than or equal to 1 month	20%
During	9%

Conclusions/Implications

Overuse injuries are not random events

They are preventable

Result of too far, too fast, too soon

What is an acceptable level of injury?

What is the dose relationship?

Do we need a multi-d approach?

Are certain ways of coping better than others?

Is injury still stigmatized?

Conclusions/Implications

- Minor injuries have a profound impact on readiness
- What works to prevent injury (intervention)?